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TECHNICAL BOOK REVIEW INDEX

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ANTHONY A. MARTIN, *Editor*

Volume 27 **January, 1961** **No. 1**

THE purpose of the Technical Book Review Index is primarily to identify reviews in current scientific, technical, and trade journals; secondarily, when feasible, to quote from these reviews. In the evaluation of scientific and technical books, reviews constitute the best existing source of information. The service of the Technical Book Review Index is thus in the field of evaluation, rather than in competition with existing publications which announce new and forthcoming books, list books by subjects, or supply bibliographic information. Each quotation immediately follows the name of the journal from which it is taken. Obviously, these brief extracts, detached from the context, must not be accepted as conclusive. Except for the correction of obvious errors, the bibliographic information is as given in the reviews. It is, therefore, in many cases incomplete and in some cases probably inaccurate.

Acheson, Richard Morrin.

Introduction to the chemistry of heterocyclic compounds. 342p. 1960. Interscience Publishers, New York, $5.

Journal of the Royal Institute of Chemistry, Nov. 1960, p.396. 1⅛ col.

"The textbook literature of heterocyclic chemistry has been greatly augmented recently, for this is the third book on the subject to appear in the last two years. Surprisingly enough, the books by Albert, by Katritzky and Lagowski and by Acheson cannot truly be regarded as competing with each other. Of the three, Acheson's is most recognizably an 'Introduction.' It is on the whole conventional, and if it lacks the excitements of originality it enjoys the virtues of straightforwardness." *K. Schofield.*

Alder, Henry L., & **Roessler,** E. B.

Introduction to probability and statistics. 252p. 1960. Freeman, San Francisco, $3.50.

New scientist, Nov. 17, 1960, p.1342. 1⅛ col.

"There is indeed an embarrassing richness of introductory texts in statistics, but it is not always easy to find a book to recommend to the novitiate which is not heavily slanted towards one or another specialized field . . . Alder and Roessler's book has grown out of an intelligent experiment in teaching operated for the past few years on the Davis campus of the University of California, the same basic course being offered to all students. The subject is developed with great care and thoroughness." *A. R. G. Owen.*

Anderson, Roger F.

Forest and shade tree entomology. 428p. 1960. Wiley, New York, $8.50.

American forests, Nov. 1960, p.5. ⅛ col.

"This 'guide to the scientific understanding, identification, and control of forest insects' is billed as both textbook and manual. The material is unusually well-arranged, and supplemental reading references at the close of each chapter give the serious student ample guidance. Unfortunately, the photographs are not uniformly good . . . A book for the foresters." *Monroe Bush.*

Baar, James, & **Howard,** W. E.

Polaris; the concept and creation of a new and mighty weapon. 245p. 1960. Harcourt, New York, $4.50.

Journal of the American Society of Naval Engineers, Inc., Nov. 1960, p.787. 1¼ col.

"[The authors] demonstrate . . . ability to tell a story clearly, convincingly, and with interest sustaining vigor . . . A story of an idea which took 18 years to be translated into hardware; of the men who pushed the idea and possibly of greater importance, of those whose action or inaction kept the program from getting underway or slowed it down later . . . The authors have done a remarkable job in bringing all of these events, these facts, into line and relationship so that the entire story appears as a continuum . . . Deserves wide reading." *J. E. Hamilton.*

Baker, H. Wright, ed.

Modern workshop technology. Ed.2. pt.2. 658p. 1960. Cleaver-Hume, London, 55s.

Engineers' digest, Nov. 1960, p.26. ⅛ col.

"The book now opens with a chapter on the general principles common to all machine tools and is followed by a discussion of the theory of cutting. In this way, the remaining sections are devoted entirely to specific machine tools and specific techniques, and space is available for a more extended treatment of important general aspects such as surface technology, lubrication, heat treatment, production planning, safety, and human relations."

Metal industry, Nov. 11, 1960, p.403. 1 col.

"A considerable amount of revision has been

included, largely as a result of developments in techniques of production, but also by reason of the changes in the pattern of industry that have occurred since the immediate post-war years. Divided into twenty-four chapters, the book provides a review of current processes of mass-production, considers some aspects of inspection procedures and touches on safety and human relations in industry."

Ball, Adrian.

Ballistics and guided missiles. 143p. 1960. Muller, London, 9s. 6d.

Engineering, Nov. 18, 1960, p.693. ½ col.

"This small book places the British effort [in guided and ballistics missiles] in perspective with the American . . . Written in popular style, very often in the first person singular, and opens almost like a novel . . . This well written and accurate little book has photographs of 17 missiles plus 14 pages of diadrams, but no index or appendices. Although aimed at the younger reader, it forms a very useful introduction to post-war accomplishments in missiles." *W. F. Hilton.*

Beitman, Morris N.

Practical radio and electronics course for home study. Ed.5. 216p. Supreme Publications, Highland Park, Ill., $3.95 unbound.

Electronic technician, Dec. 1960, p.68. ⅛ col.

"Divided into 35 lessons, from elementary radio principles through superhets and transmitters. Industrial electronics lessons are also included, covering, among other subjects, electron microscopes, strain gages, photocells, high frequency heating, and direction finders. Adequately illustrated and written in a simple manner, the text may be quite helpful to an individual unacquainted with radio theory."

Popular electronics, Jan. 1961, p.28. ⅓ col.

"The beginner in radio and electronics is introduced to the components that make up the ordinary household receiver. Following an explanation of common electronic construction practices, the book advances through meters, circuit properties, test instruments, receivers, transmitters, and non-entertainment (industrial) equipment . . . Should provide the uninitiated with a basic understanding of a broad field."

Benade, Arthur H.

Horns, strings, and harmony; the science of enjoyable sounds. 271p. 1960. Doubleday, Garden City, N. Y., $1.10 net. (Science study series.)

American journal of physics, Dec. 1960, p.821. 1⅔ col.

"Style is light and informal, and nontechnical in its approach, so that it may be understood by the teen-ager, just beginning to ask rather serious scientific questions, or by the layman . . . Fully documented, and gives a bibliography which could lead one into a comprehensive study of musical sounds and the instruments used to make them. Professor Benade brings a wealth of fundamental information to the writing of this book, based on a life-long interest in the scientific foundations of music, and his desire to present it in such a manner as to communicate his enthusiasm to others." *William S. Burton.*

Bennett, William Ralph.

Electrical noise. 288p. 1960. McGraw, New York, $10.

Electronic industries, Dec. 1960, p.58. ⅔ col.

"Describes in qualitative terms the physical nature of various important noise sources, including thermoagitation or resistance noise, shot noise in vacuum tubes and semiconductor junctions, noise from spontaneous emission of electromagnetic radiation, and noise in gas discharges . . . Among the subjects of special interest are properties of thermonoise and its relation to blackbody radiation, and an introduction into the elementary mechanics which is woven into the discussion of the maser and of noise in semiconductors."

Telephony, Oct. 22, 1960, p.161. ⅓ col.

"How noise originates in electrical circuits, the terms in which it is described, how it is measured, and how circuits may be designed to minimize undesirable effects from noise are presented . . . Coverage of recent advances includes a treatment of noise in transistors, masers, and parametric amplifiers . . . Fundamental facts about such devices as junction diodes, transistors, gas discharge tubes, klystrons, traveling wave amplifiers, and nonlinear reactive amplifiers are given as an adjunct to their noise properties. In addition to the standard theory of noise figure and its significance, a treatment is given of the more comprehensive Haus-Adler theory of noise measure."

Bergen, J. T., ed.

Viscoelasticity. 150p. 1960. Academic Press, New York, $6.

Journal of the Acoustical Society of America, Nov. 1960, p.1473. ⅔ col. including another review.

"A compilation of seven papers originally presented at a symposium sponsored by and held at the Armstrong Cork Company in Lancaster, Pennsylvania in April, 1958. The authors are American physical scientists and applied mathematicians who are authorities in the field. Each chapter is complete in itself, but all bear on the general theme of the phenomenological aspects of viscoelasticity." *R. B. Lindsay.*

Biddle, Harry C., & **Floutz,** V. W.

Chemistry in health and disease. Ed.5. 804p. 1960. Davis, Philadelphia, $6.75.

Nursing outlook, Dec. 1960, p.660. ½ col.

"Although this revision incorporates new material, only four pages have been added. The authors' expressed purpose of imparting a knowledge of chemical facts and principles succeeds better with facts than with principles . . . Subject matter is an author's choice and these authors have chosen wisely. However, scant mention is made of chemical equilibrium, and the mechanism which explains renal production of ammonia is known to be erroneous. The theory of multiple alternate oxidation of fatty acids is still retained." *Alton O. Kurtz.*

Biener, Lorenz.

Handbuch für den Rostchutzanstrich. 314p. 1960. Vincentz, Hanover, Germany, DM 22.50 unbound.

Corrosion, Dec. 1960, p.30. ⅛ col.

"A comprehensive treatise on the use of industrial coatings. The 51 literature references are all of European origin. Contents include causes of corrosion and prevention by coatings, preventive measures against rust and efficient paint use, paint preparation, questions on proper application, paint proposals and quotations, economic aspects of coating costs . . . requirements for coatings, devising a coating system, problems associated with good protection, principal mistakes and how to avoid them, formulas, durability and guarantees. Conclusions are stated in a separate chapter."

Bland, D. R.

Theory of linear viscoelasticity. 125p. 1960. Pergamon, New York, $7.50. (International series of monographs on pure and applied mathematics, v.10.)

Journal of applied mechanics, Dec. 1960, p.760. ⅛ col.

"This introduction to the concepts and methods of linear viscoelasticity could well serve as a text for a one-semester course at the beginning graduate level. The exposition is very concise but clear. The mathematical background required from the reader unavoidably includes some familiarity with transform techniques . . . Since so much has been packed into the 124 pages . . . the absence of a subject index is to be regretted." *William Prager.*

Journal of the Acoustical Society of America, Nov. 1960, p.1473. ⅔ col. including another review.

"An introduction to the mathematical theory of linear viscoelasticity . . . Somewhat . . . demanding in the formal mathematical treatment. On the other hand . . . it pays attention to the behavior of rheological materials under oscillating stresses. Thus, wave propagation through an infinite viscoelastic medium is treated, and there are special sections on free radical vibrations of a solid sphere, Rayleigh waves, and propagation along rods . . . All acousticians whose work involves them in the study of rheological materials will find . . . [this volume] of value." *R. B. Lindsay.*

Bowers, Wendell, & **Jones**, B. A.

Engineering applications in agriculture. 145p. Stipes Pub. Co., 10-12 Chester St., Champaign, Ill., $3.75 unbound.

Agricultural engineering, Nov. 1960, p.774. ⅛ col.

"Designed primarily to stimulate the problem solving ability of non-engineering students and is useful in teaching service courses. Emphasis is placed on use of fundamentals in solving typical problems by application of known principles rather than relying on memory details . . . Can be used either for a terminal course in agricultural engineering or a basic course leading to proficiency in one or more of the major areas of agricultural engineering . . . Divided into four sections including: Farm electrification; farm surveying; farm structures; and farm power and machinery."

Brewster, R. Q., and others.

Unitized experiments in organic chemistry. 200p. 1960. Van Nostrand, Princeton, N. J., $5.50 unbound.

Chemist, Dec. 1960, p.461. 8 l.

"This laboratory manual is designed to prove that organic chemistry can be taught in the laboratory, if factual material and fundamental theory complement skills and techniques. Every experiment contains a series of thought-provoking questions and a recommended time allowance for each procedure." *William M. Dunne.*

Proceedings of the Royal Australian Chemical Institute, Sept. 1960, p.381. ⅔ p.

"Of the 81 exercises presented, 7 deal with manipulative technique, 12 with qualitative analysis and the remainder with preparations. The latter illustrate the common unit processes and 'named' reactions usually included in undergraduate courses. Each exercise begins with the relevant theory, then sets out the procedure . . . and concludes with a series of test questions . . . The spiral wire binding is most unsuitable for the treatment usually accorded laboratory manuals . . . May provide useful material for those organizing preparative exercises, but it is not recommended for individual student purchase." *F. C. James.*

Brunk, H. D.

Introduction to mathematical statistics. 403p. 1960. Ginn, Boston, $7.

Physics today, Nov. 1960, p.50, 52. ⅓ col.

"This presentation by Prof. Brunk, which bids to become a standard introductory textbook, combines an extensive introduction to probability theory, with the more standard exposition of statistical techniques . . . A desirable characteristic . . . is the extensive use of examples as part of the text, generally worked out in detail and with full discussion. In addition, each chapter closes with a good selection of problems for the student. The style is lively but puzzlingly inhomogeneous . . . While it is sometimes a little irritating it does not destract in any essential way from the general readability and obvious utility of the work as a whole." *T. Teichmann.*

Buhl, Harold R.

Creative engineering design. 195p. 1960. Iowa State Univ. Press, Ames, Iowa, $3.95.

Electrical design news, Dec. 1960, p.103. ⅛ col.

"Can creative engineering be taught? Possibly, but it is more likely produced by desire. Mr. Buhl's text attempts to show the 'cookbook' engineers how they can become more creative. In his work you will find some of the reasons other countries are leading us in scientific endeavor. Environment does play an important part in creativity and we doubt that the environment in which a great number of our engineers work is conductive to creativity . . . If you are in management, R and D, product engineering or any phase of science, you must read this."

Electronic industries, Dec. 1960, p.58. ⅛ col.

"A good book if you want to develop latent creativity and decision-making ability and obtain new insight into the creative process. Outlined and discussed are ways to 'get off the beaten path,' ways to think imaginatively and design creatively. Supported by pithy examples, apt illustrations and pertinent quotes, the problem-solving phases of recognition, definition, preparation, analysis, synthesis, evaluation, and presentation are set forth in easy-

to-follow fashion with a challenge to you to be constructively discontented with the 'usual' solution and 'modifications'."

Product engineering, Dec. 26, 1960, p.66. ⅝ col.

"Essentially . . . [the author] is aiming at executives who want to stimulate and encourage an understanding of the creative process and to inspire creative effort among personnel. The book, however, will also be useful to engineers seeking ways to improve their creative output . . . Received the 1960 award of the University Press as the most significant new book by a faculty member." *E. J. T.*

Burrows, G.

Molecular distillation. 214p. 1960. Oxford Univ. Press, London, 35s.

Chemical age, Nov. 19, 1960, p.868. ¼ col.

"Claimed to be the first comprehensive treatment of the subject whose successful practice requires the collaboration of chemist, physicist and engineer. The discussion is in terms of simple kinetic theory and the standard terminology of distillation processes. Chapters of approximately equal length cover basic theory, theory of operation, representation of results, vacuum technique, mechanical design, physical design, examples of apparatus, operation and control, utilisation of the process . . . Intended for those in research laboratories and for chemical engineers concerned with high vacua."

Buxton, Cyril R., & Jackson, H. S.

Russian for scientists. 299p. 1960. Interscience Publishers, New York, $5.25.

Chemical trade journal and chemical engineer, Nov. 18, 1960, p.1174. ⅔ col.

"The authors . . . have made an undoubtedly effective contribution to the growing volume of textbook literature on Russian for chemists and others. They do not . . . number themselves among those who hold that Russian is a very easy language to learn . . . The authors wisely devote a great deal of initial space to reading practice. They have also avoided the temptation to undue compression in the systematic treatment of Russian grammar and its numerous complexities but the student is enabled by selective reading exercises to extend his vocabulary and to lighten his drudgery during his study of the grammar."

Electrical journal, Nov. 25, 1960, p.1433. ⅘ col.

"The joint authors have set out to enable the technician to acquire a good working knowledge of Russian grammar, and to be able at the end to read and write Russian—but not to speak, or to understand the spoken word . . . Both as an introduction to the language, and as a means of extending an existing knowledge to cover technical Russian, this concise but comprehensive book is one of the most important to appear in this field for many years."

Cable, J. Wesley.

Vacuum processing in metalworking. 202p. 1960. Reinhold, New York, $5.50.

Engineer, Oct. 28, 1960, p.715. ⅘ col.

"Purpose . . . is to acquaint the reader with what has been done with vacuum technology in the metal-working field . . . Deals with practical applications rather than theory; clear print, good illustrations and the index help the reader to study the subject . . . This book deliberately contains the minimum of formulae and mathematics . . . Easily read and . . . will make readers ponder whether they should not promote more widespread application of vacuum processing in all forms of metalworking."

Engineering, Nov. 25, 1960, p.729. ⅝ col.

"Text is simple and easily understood by the non-scientific but there is also enough information to keep the more advanced reader interested. In later chapters it is disappointing to find that far too much space is spent on the non-vacuum aspect of metalworking . . . Illustrations are few and unrelated to the text . . . Well worth reading provided it is understood that it is not intended as a work of reference but only as an introduction to the subject." *G. M. Gill.*

Engineering materials and design, Oct. 1960, p.640. 8 l.

"Vacuum technology is a relatively new field of engineering, and this book encompasses the range of operations found in general metal working. The first part deals with means of producing vacuum, and the latter part covers the various operations, such as deposition, sintering, brazing and welding of metals."

Iron & steel, Nov. 1960, p.563. ⅝ col.

"Written as an 'applied' treatment, rather than as a 'theoretical' one. Actually, it is the brief treatment of 'application,' more especially in the field of metallurgical preparation and production, which is the weak point of the book. Its successful feature is the general description of vacuum applications . . . Pleasantly written and provides an interesting, but too brief, summary of the vacuum field from the metallurgical aspect." *K. G. L.*

Carr, Laurence H. A.

Testing of electrical machines. 300p. 1960. Macdonald & Co., London, 50s.

Electrical journal, Nov. 11, 1960, p.1305. 1 col.

"Primarily intended for the test bed specialist but most electrical engineers at some time or other meet the necessity for critical assessment of rotating machine performance and these in particular will receive this book with some considerable satisfaction. They will find here the slick ritual of the test bay more than adequately explained in a clear text and concise mathematics which are neither frightening nor obscure. So far as the specialist is concerned, this book summarises the electrical theory of his craft." *A. H. C.*

Mining electrical & mechanical engineer, Oct. 1960, p.159. 1⅛ col.

"Very much more than a practical description of the technique of testing various types of rotating electrical machine. It is, in fact, a book which, with certain assumptions, deals adequately with the principles underlying the action of the machines concerned, the purpose of the various tests and how the data obtained is subsequently treated. The assumptions made are that the reader has a knowledge of fundamental principles and that he has a technical standard equivalent to that of the Higher National Certificate in Electrical Engineering . . . Must be of considerable interest not only to those employed in the day-to-day job of testing machines, but also to inspecting engineers, to junior design staff and to students and teachers alike in technical colleges." *R. T. L.*

Champion, Frank Clive.

University physics. Revised edition. 786p. 1960. Blackie, Glasgow, 30s.

Contemporary physics, Aug. 1960, p.500. ½ p.

"Contains the revised versions of the author's five volumes — general physics, heat, light, wave motion and sound, electricity and magnetism—and is said to be intended for students taking a first-year course in physics at a University . . . Contains a wealth of basic information but, inevitably, some parts which seem important to the present reader receive so little attention as to be of doubtful value to the beginner . . . Will go some way towards satisfying the general requirements but it would have been helpful had each chapter contained a brief note directing the young student toward appropriate more detailed accounts." *K. J. Standley.*

Chapman, Robert.

Atomic energy for all; a layman's guide to the atom and its uses. 192p. 1960. Odhams, London, 18s.

Electrical review, Nov. 11, 1960, p.841. ½ col.

"A more appropriate . . . [sub-title] could have been 'Historical Review of Nuclear Energy from News Reports.' The first seven chapters . . . deal at length with fundamental principles in very simple terms. Chapter 8 describes the use of radioisotopes while Chapter 9 is entitled 'Harwell, City of Giants.' Chapter 10 tells the story of the Windscale accidents in a vivid style and, in the same vein, descriptions of Calder Hall, fuel elements and Dounreay . . . appear in Chapters 11-13. The next chapter is concerned with fusion while Chapter 15 deals with atomic bombs . . . The final chapter discusses the good and evil results of the discovery of atomic energy." *T. C.*

Chernov, Lev A.

Wave propagation in a random medium; translated from the Russian by R. A. Silverman. 168p. 1960. McGraw, New York, $7.50.

Journal of the Institution of Electrical Engineers, Nov. 1960, p.665. ⅝ col.

"The first section presents a study of the basic problem using the ray approximation, and is confined to the case where the scale of the inhomogeneities is large compared with the wavelength. The second, and most extensive, part contains a discussion of the diffraction theory of wave propagation; finally, there is an examination of how fluctuations in the incident wave affect the image formed by a focusing system . . . Essentially an advanced theoretical treatise, though comparisons with experimental data are made on a number of points. Its appeal in the radio-engineering field is likely to be confined to research workers on wave propagation." *J. A. Saxton.*

Physics today, Dec. 1960, p.50. 1⅛ col.

"This monograph concentrates on a basic problem: given a medium with random, spatial inhomogeneities of densities and refractive index, defined in terms of their correlation functions, it is required to compute the mean and mean-square deviations of the direction of propagation of the wave, of its amplitude, and of its propagation time (phase) and the correlation between these quantities . . . A readable and well-organized review of a difficult subject of timely interest. The translator is to be commended (aside from his neglect of an index!) for his success in keeping the text from reading like a translation from the Russian." *Philip M. Morse.*

Chorafas, Dimitris N.

Statistical processes and reliability engineering. 432p. 1960. Van Nostrand, Princeton, N. J., $12.75.

Product engineering, Nov. 21, 1960, p.152. ⅛ col.

"The theory and application of mathematical statistics is discussed as a tool for engineers, particularly reliability engineers . . . Divided into six parts: Part A is a mathematical presentation of statistical techniques . . . Part B discusses the statistics of experimentation . . . Part C is devoted to stochastic processes . . . Part D digresses for a look at cybernetics, information theory, information transfer and noise; Part E explains statistical quality control; and Part F, reliability engineering."

Chupp, Charles, & **Sherf,** A. F.

Vegetable diseases and their control. 693p. 1960. Ronald, New York, $12.

Nature, Oct. 29, 1960, p.350. ⅝ col.

"After preliminary sections on seedling diseases and those affecting a range of host plants, there are sixteen chapters each dealing with the diseases of a group of vegetables. Potatoes are not included . . . An attempt has been made to write in as nearly a non-technical manner as possible so that the book may be of use to the amateur as well as to the commercial grower. Considerable success has been achieved in this respect and the narrative style is very readable . . . Also intended to serve as a text for students, research specialists and advisers, but its value in this respect is less apparent." *W. G. Keyworth.*

Clauss, Francis J., ed.

Surface effects on spacecraft materials. 404p. 1960. Wiley, New York, $11.50.

Interavia, Nov. 1960, p.1433. ⅝ col.

"The articles are divided into four subject groups: heat equilibrium of spacecraft; absorption and emissivity of materials; influence of vacuum on the properties of materials and vacuum engineering; and finally the effect of radiation and cosmic dust on the surface of a space vehicle . . . The excellent layout of this book and its clear presentation of a difficult subject will surely create a demand for it outside the still limited group of experts—particularly as the themes discussed are of interest to fields beyond pure astronautics." *P. R.*

Collins, John C., ed.

Radioactive wastes; their treatment and disposal. 239p. 1960. Spon, London, 55s.

Colliery engineering, Nov. 1960, p.491. ½ col.

"Will prove of great value and interest to a wide range of professional people — civil, municipal and chemical engineers, biologists, chemists concerned with water supply and with

the disposal of domestic and industrial wastes, industrial executives faced with policy decisions regarding the use of radioactive material, Medical Officers of Health, Factory Inspectors, and students of these professions."

Electronic engineering, Nov. 1960, p.717. ⅓ col.

"Undoubtedly one of the most important contributions of recent years to the field of Wastes Engineering. The first half . . . is of a fundamental nature, explaining the problems which have to be understood when dealing with radioactive material, and the second half deals specifically with the treatment and disposal of liquid, solid and gaseous radioactive wastes, and includes valuable information on the results of laboratory work and on the experience gained in operating treatment plants in different parts of the world."

Journal of the Institution of Electrical Engineers, Nov. 1960, p.666. ⅓ col.

"The first authoritative work on the subject . . . Contains a large amount of information concisely presented and well co-ordinated, and each of the ten contributions has the unmistakable backing of extensive experience. Every engineer with responsibility in the field of nuclear energy should read this book, while the section on the discharge of radioactive effluent to the atmosphere will interest every non-nuclear engineer who has a chimney-stack problem. A particularly welcome feature is the large number of references supporting each chapter." *B. L. Goodlet.*

Cooke, Nelson Magor.

Basic mathematics for electronics. Ed.2, revised. 679p. 1960. McGraw, New York, $10.75.

Electrical design news, Dec. 1960, p.103. ⅓ col.

"Perhaps McGraw-Hill erred in entitling this book. The real title undoubtedly lies in the 'Cooke's Math', Second Edition, found on the back wrapper cover. The color of the binding has changed from black to beige and the number of pages have increased. The approach, however, is the same and color is used throughout to aid in locating specific rules and subtitles. This is still probably the best basic math book for radio men, electronic technicians, service men and trade school students."

Electronic technician, Dec. 1960, p.68. ⅓ col.

"The [older edition] was favorably received due to its format of relating abstract math to practical electrical and electronic problems . . . Correlating algebra, trigonometry, vectors, and logs to working problems in electronics makes a rather dreary subject unusually agreeable. A completely new chapter, 'Meter Circuits,' examines the circuitry of various meters through Ohm's Law. The addition of a second color, red, is unusual for a math book. It is used to emphasize important formulas, solutions, and circuit sections being discussed . . . Highly recommended for self-study or reference."

Cotton, Harry.

Alternating current machines. Ed.2. 328p. 1960. Cleaver-Hume, London, 21s.

Mechanical world, Nov. 1960, p.486. ⅖ col.

"This concisely written account of the most widely used kinds of electrical machinery will appeal principally to non-specialist students and those in industry requiring a good basic treatment of the subject . . . Anyone with a good introductory knowledge of technical electricity can easily follow the text . . . Some revisions and additions have been made. In keeping with modern practice m.k.s. units are now used."

New scientist, Nov. 10, 1960, p.1274. ⅖ col.

"Full of facts about practical machines and it might well have been called 'Descriptive a.c. machine engineering'. The mathematics is virtually reduced to zero and consequently no theoretical treatment of the subject is possible . . . Whilst the expert may not agree with all the statements made in it, this book is an excellent reference volume." *E. R. Laithwaite.*

Power & works engineering, Nov. 1960, p.924. ⅓ col.

"Changes introduced . . . include the adoption of M.K.S. units in place of the earlier C.G.S. notation, and the addition of references to British Standards Specifications wherever applicable. Special attention has been given to the constructional features and characteristics of the fractional-horsepower motors so widely used today, and to the choice of motors for particular conditions. Otherwise, the book remains a lucid, almost non-mathematic text very suitable for the needs of industrial folk who need not go deeply into fundamental theory."

Crowder, Norman A.

Arithmetic of computers. Revised edition. 472p. 1960. Doubleday, Garden City, N. Y., $3.95.

Radio-electronics, Jan. 1961, p.128. ¼ col.

"An excellent text with a built-in teacher. Only a minimum of basic mathematics is required . . . everything else necessary is detailed in the text . . . A student cannot get to the end of the book without understanding it, as there is no way to skim through without knowing the correct answers, which in turn require a knowledge of the subject material." *L. S.*

Davis, Hallowell, & **Silverman,** S. R., ed.

Hearing and deafness. Revised edition. 573p. 1960. Holt, New York, $7.95.

Noise control, Sept.-Oct. 1960, p.33. ⅖ col.

"An essentially non-technical treatment of the broad field of audiology. The task of describing a broad field has been approached by enlisting the help of fifteen specialists in the field. The result is a treatment of the subject which is, for the most part, authoritative yet pleasantly readable . . . Actually, anyone associated with the reaction of personnel to noise would do well to read the book in its entirety, and I strongly suspect he would enjoy the task." *Earl D. Schubert.*

Dawson, Raymond F.

Laboratory manual in soil mechanics. Ed.2. 177p. 1960. Putnam, New York.

ASTM bulletin, Oct. 1960, p.62. ¼ col.

"Originally prepared for the author's laboratory classes in soil mechanics at the University of Texas, the notes have now been prepared for wide usage. The purpose of these detailed notes is to expand on the procedures found in such standard methods as those published by

ASTM and the American Association of State Highway Officials in order to permit the student or inexperienced laboratory assistant to conduct the laboratory experiments without additional instruction. Additional tests not covered in standards are also included in the contents." *L. C. Gilbert.*

Dean, Frederick E.
Steel. 143p. 1960. Muller, London, 9s. 6d.

British steelmaker, Nov. 1960, p.397. ¾ col.

"In easy, non-technical language—maintained throughout the book—the author has crystallised the development of iron and steel technology . . . The greater part of the book is devoted to steelmaking today. There is an extensive chapter on the raw materials of ironmaking, and a detailed description of the modern blast furnace. Short accounts of the various steelmaking processes follow . . . Mr. Dean is abreast of the times, for the LD and rotor processes are also mentioned . . . He has given young people and the layman an easily read, up-to-date account of the most important material of modern times. It is perhaps not his fault that the book has no index"

Delavenay, E.
Introduction to machine translation. 123p. 1960. Thames, London, 25s.

Electronic engineering, Nov. 1960, p.717. ⅝ col.

"During the last decade, books and articles have appeared on the machine translation of language and the book under review attempts to give a comprehensive study of the field up to the present time . . . Eminently readable and can be recommended to specialist and layman alike." *A. D. Booth.*

Derry, T. K., & Williams, T. I.
Short history of technology from the earliest times to A.D. 1900. 782p. 1960. Oxford Univ. Press, London, 38s.

New scientist, Nov. 17, 1960, p.1341. 1⅝ col.

"For both the specialist and the intellectually curious 'general reader' . . . here is now available, in one volume . . . a comprehensive 'background' survey of the whole story of the technical development of gregarious mankind . . . In each part the story opens with a general historical survey which attempts to do justice to the technological factor as a contributory to the main story of civilization. But thence onwards the different technologies are necessarily developed separately chapter by chapter . . . Well-indexed, and a useful and comprehensive time-chart is provided which the reader is advised to consult simultaneously with the reading of the book." *Ivor B. Hart.*

Deutsche Einheitsverfahren zur Wasserabwasser-und Schlammuntersuchung. Ed.3. 88p. 1960. Verlag Chemie, Weinheim, Germany, DM 20 unbound.

Journal of the Royal Institute of Chemistry, Nov. 1960, p.394. ¾ col.

"This publication is part of the third edition of methods for determining constituents in water, effluents and sludge, compiled by a group of German experts . . . Similar in scope to *Methods of Chemical Analysis as applied to Sewage and Effluents* published recently by H.M.S.O. and to *Recommended Methods for the Analysis of Trade Effluents* compiled by the joint A.B.C.M.-S.A.C. Committee . . . Methods are adequately described, including, in many instances, a short account of the theory involved. References to literature are given, but mostly from German sources . . . Well produced and should prove of interest to those engaged in water and effluent analysis." *W. G. Carey.*

D'Eye, R. W. M., & Wait, E.
X-ray powder photography in inorganic chemistry. 222p. 1960. Academic Press, New York, $8.50.

Analytical chemistry, Dec. 1960, p.72 A. 1 col.

"There is considerable emphasis on the chemical applications of x-ray diffraction; discussion of symmetry and methods of structure analysis has been kept to a necessary minimum. Yet . . . this book has many drawbacks. The price . . . is very high for a book of this size. And, while the reviewer agrees with the general objectives of the book, he feels that in many major respects emphasis is misplaced . . . In spite of many deficiencies this text helps to fill one of the major gaps in the literature." *Ben Post.*

Chemical age, Oct. 29, 1960, p.730. ¼ col.

"Provides an excellent systematic account of current techniques, a good deal of it perhaps too specialised for those starting up in the subject. It will, in fact, be read with interest by most X-ray diffraction workers. There are lucid chapters on generation of X-rays; cameras; powder photographs; cell dimensions; crystallographic theory; intensities; applications. It is unfortunate that the essential simplicity of some of the methods is not illustrated before the final chapter and many chemists might wish for and benefit from a fuller account of qualitative analytical procedure."

New scientist, Oct. 13, 1960, p.1011. ⅝ col.

"May be regarded as a 'Do it yourself' manual for the inorganic chemist . . . Confines itself to the experimentally simplest set-up—the powder method—and gives detailed descriptions of the various types of X-ray tubes and cameras that can be used, methods of analysis of photographs, some basic theory and some examples of chemical information that can be obtained. The authors make no elaborate claims for the methods they describe; they have been careful to point out their limitations as well as their successes . . . [Chemists] will certainly find the results they obtain extremely useful and they may even find that single-crystal work is not so abstruse after all." *H. Lipson.*

Duckworth, Henry E.
Electricity and magnetism. 424p. 1960. Holt, New York, $8.

Physics today, Nov. 1960, p.46. 1 col.

"Directed towards students at the intermediate level who need know nothing of electricity and magnetism but who have studied elementary physics and calculus (differential and integral) and have some knowledge of vector usage and differential equations. For such students this is an excellent introduction to the subject and alone should serve to carry

the reader from zero knowledge to the level of tackling advanced texts such as Jeans. The writing is economical but the development is as full as could be desired and the author has succeeded in keeping a high standard of rigor and logic." *D. Keefe.*

Dunn, Gordon E., & **Miller,** B. I.
Atlantic hurricanes. 326p. 1960. Louisiana State Univ. Press, Baton Rouge, La., $10.

Science, Nov. 11, 1960, p.1392. 1⅔ col.

"For the more scientifically minded, the book will not serve as an adequate substitute for the chapter on tropical storms contained in Riehl's *Tropical Meteorology* (1954) or for the section on climatology and the record of storm movement and behavior found in Tannehill's *Hurricanes* (1944) . . . By and large, however, the book provides interesting reading for the layman and vital information to state and city officials, construction engineers, and others concerned with alleviating hurricane damage." *H. Wexler.*

Eaton-Dikeman Company.
Handbook of filtration. 57p. 1960. The Company, Mount Holly Springs, Pa., $2.50.

ASTM bulletin, Oct. 1960, p.64. ⅝ col.

"Assembles in one place a large amount of information of value to laboratory workers and to individuals with industrial filtration problems. A chapter is devoted to test methods for the evaluation of filter papers. Some of these methods have never been described in the literature. The chapters on retention and permeability are well presented, and contain both practical and theoretical information. The discussion of the relative merits of cotton and wood pulp fibers for making filter papers is especially interesting. The section on industrial filtration includes an excellent elementary description of the operation of the filter press." *W. K. Wilson.*

Industrial chemist, Nov. 1960, p.575. ¼ col.

"The title . . . is rather misleading as it suggests that a much wider field is covered than is the case. In fact the book is confined to the use of paper in filtration and touches on general industrial practice very cursorily in a single chapter. However, in the first five chapters an attempt is made to treat paper filtration from as fundamental a point of view as possible, and to this end two chapters are devoted to the practical and theoretical aspects of permeability."

Eggington, Harold H.
Refrigeration controls. 164p. 1960. Refrigeration Press, Ltd., 131 Great Suffolk St., London, S.E.1, 15s.

Engineer, Oct. 28, 1960, p.715. ⅝ col.

"It is stated in the foreword that this book is intended to provide a practical approach to design, functioning and application of instruments to the control of refrigeration equipment, but this is further qualified by the comment that many volumes could be written on this subject, and that these chapters can only be an introduction . . . In a small book such as this the author must of necessity be brief, but he provides a useful introduction to refrigeration controls for those entering the industry and for some practising engineers who wish to know a little more about the functioning of controls."

Eirich, Frederick R., ed.
Rheology; theory and applications. v.3. 680p. 1960. Academic Press, New York, $21.

Discovery, Nov. 1960, p.500. ⅝ col.

"Certain chapters still reproduce rather large sections of classical treatments which most readers already have in several places on their shelves; otherwise, the massive contents supply very useful material . . . Too specialised for readers who are not rheologists; but the ranks of rheologists are now increasing so rapidly that these volumes will meet an immediate and very substantial need . . . Will remain a classic for many years to come." *G. W. Scott Blair.*

Laboratory practice, Nov. 1960, p.792. ⅛ col.

"Originally intended that this third volume should complete this treatise on Rheology, but it now seems likely that it will be followed by a fourth . . . It is a pity that it has not been possible to agree on a unified nomenclature but the list of symbols appended to the chapters largely meet this criticism . . . In this review, it has hardly been possible to do justice to such an important contribution to rheology. 'Eirich' is already a classic and will remain so for many years to come." *G. W. Scott Blair.*

Physics and chemistry of glasses, Oct. 1960, p.171. ⅝ col.

"The present . . . volume is of the same high standard as the first two. Chapter 1 by B. H. Zimm is concerned with the use of normal co-ordinate method to discuss the relaxation and flow of polymer chains in dilute solution . . . Chapter 2 by S. Oka gives the theory of a great number of geometrical arrangements which could be used to measure the viscosity of Newtonian liquids . . . Chapter 3 deals with polymer electrolytes. The remaining chapters are reviews of the rheology of a number of materials such as latex, printing inks, pastes and paints, concrete, and with the rheological problems of adhesion, spinning, moulding and screw extruders." *R. W. Douglas.*

Emmett, Paul Hugh, ed.
Catalysis. 7v. v.7: Oxidation, hydration, dehydration and cracking catalysts. 378p. 1960. Reinhold, New York, $13.50.

Chemical age, Oct. 29, 1960, p.730. ¼ col.

"Includes an author index and subject index and, in keeping with the other volumes of the series, provides an invaluable reference source and review series on the physical chemistry of catalysis and catalytic processing. This volume completes the work. No index covering all seven volumes has yet been published."

Chemical products and chemical news, Nov. 1960, p.530. ⅓ col.

"Includes four chapters on catalytic oxidation, one on hydration-dehydration and one on cracking catalysts, each written by authorities in the particular field . . . The value of a book of this sort to the research worker in the field is immense, particularly with the

large number of references to the original literature up to 1958. The Editor, authors and publishers are to be congratulated on the clarity and conciseness of expression and the general presentation, not only of this volume, but of the preceding six." *A. M. James.*

Estevez, J. M. J., & Powell, D. C.
Manipulation of thermoplastic sheet, rod and tube. 148p. 1960. Interscience Publishers, New York, $4.85.

Electrical review, Oct. 28, 1960, p.736. ½ col.

"A clear survey of the principal thermoplastic materials available commercially, and the methods by which they can be fabricated into useful goods. Wherever possible a critical assessment is made of the materials and techniques available for a particular application. The substances considered are polymethyl methacrylate; polyvinyl chloride and vinyl copolymers; polystyrene and toughened polystyrene; and polythene."

Fowler, John M., ed.
Fallout; a study of superbombs, strontium 90 and survival. 235p. 1960. Basic Bks., New York, $5.50.

Nursing outlook, Dec. 1960, p.660. ⅔ col.

"A compilation of scientific findings regarding radiation, its effects on living tissue, and bomb testing. The stated purpose . . . is to provide the lay public with scientific findings regarding the hazards of radioactive fallout so that they may be able to make intelligent decisions as citizens. In spite of considerable repetition and tedious scientific data, the book is geared to a public with no more than elementary knowledge of physics and biology." *Grace E. Davidson.*

Gackenbach, R. E.
Materials selection for process plants. 318p. 1960. Reinhold, New York, $8.50.

Chemical & engineering news, Dec. 12, 1960, p.80. 1¾ col.

"Provides a general survey of all the classes of materials the process engineer is apt to encounter. The materials, alloys, stainless steels, aluminum and aluminum alloys, the copper family, lead, and the more exotic metals are covered. Also treated are bricks and cements, plastic materials, rubber and elastomers, and surface finishes . . . A book for the grass-roots engineer and, as such, is fortunately not a highly theoretical electrochemical dissertation . . . The author achieves his purpose of 'presenting material in non-technical terms to be of the greatest use to that large group responsible for obtaining . . . maximum life at minimum cost . . .' in corrosive environments." *Russ Henke.*

Geiger, Darrell L.
Successful preparation for F.C.C. radio operator license examinations. Ed.2. 689p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $9.25.

Electronic technician, Dec. 1960, p.68. ⅛ col.

"May be added to the list of available reference guides for anyone interested in obtaining an FCC license. Information is presented in the FCC test question style, with the helpful addition of answers following each one . . . Divided into eight segments corresponding to the eight elements used by the FCC. Basic law, basic operating practice, basic radio-telephony, advanced radio-telephony, radiotelegraph operating practice, ship radar techniques, etc., are among the various elements presented."

Popular electronics, Jan. 1961, p.24, 26. ⅓ col.

"Describes the various licenses, the nature of the examinations which have to be taken to obtain them, and how to prepare for the exams. Broad answers to hundreds of typical questions are given which, if studied carefully, will enable the reader to answer any actual exam questions on the same topic correctly. A must for the man seeking a commercial license."

George, Joseph J., and others.
Weather forecasting for aeronautics. 673p. 1960. Academic Press, New York, $15.

Aerospace engineering, Dec. 1960, p.121. ¼ col.

"Purpose . . . is to provide the practicing forecaster and the pilot who desires to learn more about the art and science of predicting weather with the necessary aids and methods for making practical application of his knowledge of the fundamentals of meteorology. Most of the material is based on work performed in the Eastern Air Lines meteorological laboratory under contract with the AFCRC, the USN Weather Research Facility, and the US Weather Bureau."

Interavia, Dec. 1960, p.1571. ⅛ col.

"What heads of air services, pilots and navigators need is a comprehensive empirical presentation of the facts with as many practical examples as possible. And this is generously supplied by the author . . . Nearly every one of the eighteen chapters . . . contains numerous weather maps as used in scheduled airline operations, and detailed descriptions of individual situations leading to a better understanding of this complicated subject. The reader is spared indigestible mathematical formulae . . . With this clearly written work, Joseph J. George has rendered flying personnel an invaluable service." *H. E.*

Glasstone, Samuel, & Lewis, D.
Elements of physical chemistry. Ed.2. 758p. 1960. Van Nostrand, Princeton, N. J., $8.50.

Journal of chemical education, Nov. 1960, p.607. ½ col.

"In addition to quite a few minor rewritings of sections and rearrangements and expansions of material, two major changes have been made: the discussion of the properties of gases and of thermodynamics has been moved up to the beginning of the book; and a considerable amount of new material has been added . . . The main new topics, all of which markedly improve the book, are the statistical significance and calculation of entropy, molecular spectra, primary processes and other topics in photochemistry, and nuclear chemistry . . . On a par as a text with the best of the 'standard' physical chemistry texts." *E. C. Lingafelter.*

Goertzel, Gerald, & **Trailli,** N.
Some mathematical methods of physics. 300p. 1960. McGraw, New York, $8.50.
Glass industry, Nov. 1960, p.656. ¼ col.
"Gives practical mathematical methods for solving problems in such fields as electromagnetic theory, quantum mechanics, reactor physics and acoustics. The techniques illustrate the basic concepts involved in the study of linear systems with particular emphasis on eigenvalues, eigenfunctions, and Green's functions. Among the subjects covered are Fourier analysis, perturbation, variation, and numerical approximation methods; matrices; operators; vector spaces and orthogonal functions."

Grassie, James Campbell.
Applied mechanics for engineers; statics, dynamics, strength of materials. 652p. 1960. Longmans, New York, $9.50.
Engineer, Nov. 11, 1960, p.800. 1 col.
"Deals with the elements of statics, kinematics, dynamics, stress and elasticity as covered in the first two years of an undergraduate course and . . . is well provided with numerical examples by which the student may test his knowledge of all the more important topics. The presentation of the subjects, the paper, the printing and the diagrams are all excellent. Here and there are a few imperfections that may attract the attention of a reviewer without being seriously detrimental to the interests of the student . . . A sound introduction to the subject of applied mechanics."
Engineering materials and design, Dec. 1960, p.780. ⅝ col.
"There are few books published that deal with the vast subject of mechanics in such a concise way as this one . . . The book although divided into three parts, has, where necessary, appropriate cross-references to other parts, in order to illustrate the interconnection within this field of engineering . . . Many easy-to-follow examples are quoted, and useful exercises are set. Step by step, the principles involved are set out, and it is thus possible to see a solution to any obscure problem . . . Tends to aid engineers by showing methods of approach to some of the more difficult problems." *F. Smith.*

Gray, C. H., ed.
Laboratory handbook of toxic agents. 170p. 1960. Royal Institute of Chemistry, London, 20s.
Chemical age, Nov. 26, 1960, p.906. ¼ col.
"Divided into, introduction (12 pages), precautions and preventions (12 pages), first aid in the laboratory (10 pages), poisonous and corrosive gases, reagents and solvents (114 pages), precautions against radiations (18 pages), and glossary (2 pages) . . . Chemists might well have individual copies which they should be encouraged to read and subsequently consult when they work with any material with which they are not perfectly familiar . . . Essentially a book to forewarn."

Grob, Bernard, & **Kiver,** M. S.
Applications of electronics. 628p. 1960. McGraw, New York, $10.
Electronic technician, Nov. 1960, p.74. ¼ col.
"Written for both technician and student, this introduction to electronics assumes a knowledge of elementary electricity and electronics. The authors discuss subjects in their logical order . . . Math, in this well-illustrated book, is kept to a bare minimum. Recommended for technicians who wish to review or reinforce their electronic knowledge and acquire a non-TV electronic foundation, as presented in 1/3rd of the book."

Guyon, Yves.
Prestressed concrete; translated by C. van Amerougen. v.2: Statically indeterminate structures. 741p. 1960. Contractors' Record Ltd., London, 95s.
Concrete and constructional engineering, Nov. 1960, p.398. ⅝ col.
"A collection of the author's numerous papers and notes on the subject of statically-indeterminate prestressed concrete structural systems such as beams and slabs and assemblies of beams as in portal frames and multiple-frame buildings. Cylindrical tanks, arches, domes and some other structures and foundations are not dealt with. The subjects are collated under two main headings, namely the elastic analysis of statically-indeterminate systems and tests . . . The translator . . . is to be commended for providing in the main a very clear exposition of what could be a difficult subject . . . Not a work of easy reference."

Haslett, Arthur Woods. See **Science** survey, 1.

Henin, S., and others.
Le profil cultural. 320p. 1960. Société d'Editions des Ingenieurs Agricoles, Paris, 20 N.F.
Soil science, Nov. 1960, p.324. ⅝ col.
"A well-developed, well-illustrated, very readable and informative book on the principles of soil physics written by members of the staff of the central laboratory for agronomic research at Versailles, France . . . Material is presented in non-mathematic terms. Excellent bibliographies are appended to the several chapters, but the lack of an index is regrettable."

Herden, G., ed.
Schweiss- und Schneidtechnik. 883p. 1960. Marhold, Halle (Saale), Germany.
British welding journal, Nov. 1960, p.678. 1 col.
"Consists of contributions from 18 authors . . . Contains descriptive material which is useful to the student of engineering in general and of welding in particular as well as exhaustive tabular matter covering coefficients for use in calculations, material preparation data, recommended procedures and machine settings, etc. which are suitable for immediate practical application . . . The present reviewer would . . . congratulate authors, editor and publisher on a most creditable achievement." *F. Koenigsberger.*

Hill, Terrell Leslie.
Introduction to statistical thermodynamics. 508p. 1960. Addison-Wesley, Reading, Mass., $9.75.

Philosophical magazine, Sept. 1960, p.976. ¼ p.

"Intended . . . as an introductory text-book on equilibrium statistical mechanics, and as such is aimed at the same public as Rushbrooke's text-book . . . Mainly meant to be used for courses for chemists—in Great Britain it would serve admirably for a final Honours Year course. The coverage of topics is very broad and gives a good idea of modern—that is, post-war—developments in statistical thermodynamics . . . A large number of exercises of a broad range of difficulty make this book even more useful, and this reviewer expects that it will be widely used by physical chemists." *D. ter Haar.*

Howard, R. A.
Dynamic programming and Markov processes. 131p. 1960. Wiley, New York, $5.75.

Electronic engineering, Nov. 1960, p.719. ¼ col.

"This book is the first to explore exhaustively the relation between dynamic programming and Markov processes, and defines discrete- and continuous-time Markov processes, provides a physical insight into their behaviour, and shows how to solve them by means of operational transformations."

Hughes, William Lewis.
Nonlinear electrical networks. 210p. 1960. Ronald, New York, $10.

Proceedings of the IRE, Nov. 1960, p.1926. 1⅙ col.

"Although primarily a text for graduate electrical engineering students, this book should also serve as a useful reference for research and development engineers and physicists. Its title might well have been prefixed by 'An Introduction to . . .' or 'Fundamentals of . . .' in the sense that its coverage is broad and primarily concerned with classifying types of problems and approaches to their solution, rather than presenting a detailed analysis of a few specific problems . . . Considering all its features, this book represents a better than average treatment of the subject . . . Should be well received among educators as well as practitioners." *H. M. Straube.*

International symposium on microchemistry, Birmingham University, 1958. 583p. 1960. Pergamon, New York, $15.

Chemical products and chemical news, Nov. 1960, p.530. ⅓ col.

"The great conference on micro-analytical techniques held in the University of Birmingham in 1958 brought together many of the world's most famous analytical chemists and it is most fitting that the symposium should be recorded in this excellently produced volume. It is a little unfortunate that it has taken so long to produce the text so that some of the value it might have had as a statement of the present stage of development has been lost. Despite this the book provides a most useful if extremely expensive reference for both analytical methods and the analysts who use and develop them." *J. R. Majer.*

Jaeger, Thomas.
Technischer Strahlenschutz. 192p. Thiemig, Munich, Germany, DM 8.60.

Engineer, Oct. 28, 1960, p.714. ⅓ col.

"Summarises the position reached by the end of 1958, dividing the subject into two main sections: radiation shielding by means of concrete, and the disposal of radioactive waste . . . The author discusses the physical theory underlying the absorption of radiation in matter, in particular in shielding materials. Subsequent chapters are devoted to design calculations . . . and technology of concrete . . . The second part . . . is devoted to the control of fissile waste products whether arising from the operation of reactors, separation processes, accidents, or in the course of work in 'hot' laboratories. Over 200 references are listed."

Jeannel, R.
Introduction to entomology; translated from the French by Harold Oldroyd. 344p. Hutchinson, London, 63s.

New scientist, Nov. 17, 1960, p.1343. ½ col.

"The translation . . . is a pleasure to read at any point and [the translator] . . . cannot be held responsible for Professor Jeannel's heavy bias in favour of French authorities. One looks in vain for references to outstanding British work . . . The line illustrations are excellent; the colour plates less so . . . However, the shortcomings are counter-balanced by several outstanding chapters on the evolution, palaeontology and geographical distribution of insects." *John Hillaby.*

Joel, Rayner.
Heat engines. 538p. 1960. Longmans, New York, 18s.

Steam engineer, Nov. 1960, p.65. ½ col.

"Written to cover the work necessary for the subject of Heat Engines set in the Ordinary National Certificate and Ordinary National Diploma examinations . . . Sequence of chapters is arranged so that the textbook can be worked through progressively and includes numerous examples taken from past examination papers of various institutions . . . Very reasonably priced and should be useful to many students."

Kirschenbauer, H. G.
Fats and oils. Ed.2, revised. 240p. 1960. Reinhold, New York, $7.

Chemical products and chemical news, Nov. 1960, p.529. 1 col.

"The author's intention in the first edition . . . was to produce a simple, compact exposition, yet outlining all the fundamentals of the chemistry and technology of oils and fats, so that the reader should see the subject as an intelligible whole. In the compass of some 240 pages of simple, lucid statement, this second, revised, edition has achieved that aim with commendable success . . . Up to date, adequately documented, and admirably produced . . . One of the best, more readable, 'put you in the picture', and concise surveys of the chemistry, processing, and ramifications of fats and oils the reviewer has seen for some time." *S. Oldham.*

Journal of the American Oil Chemists' Society, Dec. 1960, p.36. ½ col.

"Because of the condensed presentation of such a broad subject, the book should be most useful to nontechnical personnel associated with or those allied to the industry who wish to become familiar with the various aspects of fat and oil technology . . . Also recommended to the technical man new to the field as a general reference and introductory survey." *Victor V. Studer.*

Kiver, Milton S., & **Gray**, C. R.
Servicing transistor TV receivers. 269p. 1960. Sams, Indianopolis, $4.50 unbound.

Electrical design news, Dec. 1960, p.102. ⅔ col.

"Fortunately, this text does not limit itself only to the servicing of these receivers, but also explains the operating fundamentals of the various circuits in a concise and straightforward presentation. The average technician or electronics student should be able to digest the information contained with a minimum of effort. A very large number of schematics and waveform illustrations are used to help the reader understand the text . . . Can be recommended for service technicians and others interested in how the various manufacturers' circuits operate."

Popular electronics, Dec. 1960, p.20. ¼ col.

"A good basic book written for the television technician. With the coming of transistorized television sets, this text should be welcome on every test bench. Also, the theory discussion and circuit drawings of the basic TV circuit elements should prove valuable to the electronic experimenter who likes to putter with new transistor circuits."

Kundel, H., ed.
Handbuch der Mechanisierung der Kohlengewinnung. 135p. 1959. Glückauf, Essen, Germany, DM 17.

Colliery engineering, Nov. 1960, p.491. ⅜ col.

"The Committee for Coalface Mechanisation at the Steinkohlenbergbauverein Essen has published the . . . book . . . Contains the results of the investigations for which this Committee has been responsible over the last eight years, and the recommendations based on the collective experience of sixteen leading personalities in the Ruhr district and one from the Dutch State Mines who form this committee . . . The three principal coal-getting methods, which, under the conditions prevailing there, are based on plough type, cutter type and ram type machines, are analysed."

Lee, Y. W.
Statistical theory of communication. 509p. 1960. Wiley, New York, $16.75.

Electronic industries, Nov. 1960, p.50. ⅛ col.

"An introductory book. The object . . . is to present clearly and rigorlessly a physically motivated and systematic account of the statistical theory of communication—an account that includes essentially all of the basic elements. In preparing this book, the author has been guided by the idea that a teacher should not attempt to cover the subject of study but should attempt to uncover it for the student . . . Primarily written for the first year graduate student in electrical engineering as a one-semester course. As such it does not include material non-linear systems."

Letsch, Heinz.
Captured stars; translated by Heinz Spitzbardt. 183p. 1960. Collet, London, 28s.

Discovery, Nov. 1960, p.500. ⅛ col.

"This new book . . . is a mine of information. There is an historical introduction, followed by a description of the mechanism of a planetarium; the various refinements and projectors are described in an admirably clear manner. Famous planetaria, such as those at Milan, Jena, Tokyo, Paris, and Chicago, are then described in more detail. There are many illustrations, all of excellent quality . . . A work of extremely high standard, and is in every way to be recommended." *P. Moore.*

Levine, Daniel, and others.
Radargrammetry. 330p. 1960. McGraw, New York, $12.

Electronic technology, Nov. 1960, p.436. 10 l.

"For specialists, primarily it would appear for those who have to interpret the picture on the radar screen in terms of orthodox map projections or anticipated targets . . . Also deals with aerial design, with the elementary theory of the return signal (elementary, that is, at this level), and with the causes and recognition of radar 'ghosts' and atmospheric 'angels'. The concluding chapters discuss various aspects of the design of radar systems and the incidence of noise and other factors on positional accuracy." *G. R. N.*

Lockwood, Joseph Flawith.
Flour milling. Ed.4. 526p. 1960. Northern Pub. Co., Liverpool, England, 105s.

New scientist, Nov. 3, 1960, p.1204. 1 col.

"One of the three modern standard reference works written in English; it is in world-wide demand . . . Naturally, therefore, much of it is highly technical . . . Sections that have been revised, extended or added, include those on: characteristics of wheat supplies and methods for testing wheat and flour; equipment, including the application of pneumatic conveying, for cleaning, and removing impurities from grain; grinding, sifting and purifying endosperm particles in the course of milling; packing, bulk-storage and transport of flour; protein concentration by means of air-classification of flour; the control of power used in milling and an analysis of production costs." *O. R. Jones.*

Lumb, Ralph F., ed.
Management of nuclear materials. 516p. 1960. Van Nostrand, Princeton, N. J., $16.50.

Ordnance, Nov.-Dec. 1960, p.420. ½ col.

"Does not make easy reading for the ordinary procurement official dealing with conventional industrial materials, but it should be invaluable to anyone in a responsible position connected with an atomic-energy plant, whether on a submarine or in a power station . . . Gives the methods of purchasing, recording, testing, and storing, but also . . . [gives] much space

to enrichment procedure, fabrication of reactor fuel elements, and recovery of fuel and scrap . . . A 'must' volume for the libraries of all nuclear plants." *George S. Brady.*

Mann, F. G., & Saunders, B. C.
Practical organic chemistry. Ed.4. 585p. 1960. Longmans, New York, $5.50.

Chemical age, Nov. 26, 1960, p.906. ⅔ col.

"As the new matter has been added on to the original, the choice of experiments is large, and the task of selection is turned into an exasperating problem by the absence of any but the most rudimentary table of contents. Weakest feature of the older editions was Part III, on qualitative analysis, and, regrettably, this state of affairs is perpetuated. While doubtless adequate for the restricted range of compounds for which it is designed, it provides a poor introduction to the fundamentals of organic qualitative analysis."

Chemistry & industry, Dec. 3, 1960, p.1502. 1 col.

"Two major changes have been introduced. In the first place greater emphasis has been placed on semi-micro techniques and their application to preparations, separations, analysis and physical determinations such as those of molecular weight . . . Secondly, the scope . . . has now been extended so that it caters for all students up to Honours or Special Degree standard and even beyond . . . No greater compliment can be paid to 'Mann and Saunders' than the continued demand for it by undergraduate and graduate alike." *R. B. Strathdee.*

Mendelssohn, K.
Cryophysics. 183p. 1960. Interscience Publishers, New York, $4.50.

Contemporary physics, Aug. 1960, p.499. ⅔ p.

"Throughout the author has used the minimum of mathematics and this book should be readily followed by science teachers and others wishing to refresh the outline of their knowledge, besides students making their first acquaintance with low temperature physics. At the end of each chapter there are useful references to review articles or more advanced books for further reading. The question of subject matter and how it is weighted in a book of this sort is very much a matter of personal choice. Thus a little more on magnetism and transport phenomena could have been desired. Nevertheless, for the student here is a useful and readable introduction to a very active field of modern physics." *D. H. Parkinson.*

Milne-Thomson, Louis Mellville.
Theoretical hydrodynamics. Ed.4. 660p. 1960. Macmillan, New York, $11.

Aircraft engineering, Nov. 1960, p.340. ⅛ col.

"Differs only slightly from the second and third editions . . . Treatment of the flow of a liquid with a free surface, including surface waves, has been extended a little. Apart from this, only very small changes have been made and hardly anything has been deleted. As in earlier editions, the book gives an authoritative account of the mathematical theory of the flow of an inviscid incompressible fluid. Although there are chapters on the effects of viscosity and compressibility, these chapters are relatively brief and the reader who wishes to learn about these effects must consult other books." *W. A. M.*

Möbius, Karl.
Flugsicherung; Organisation und Betriebsverfahren. Ed.2, revised and enlarged. 192p. 1960. Reich, Munich, Germany, DM 11.80.

Interavia, Nov. 1960, p.1432. ¼ col.

"Apart from changes in a number of operating procedures and general regulations, the new edition has had to include new sections on air traffic control services for the upper air and on radar control of air transport. The chapters on the certification and operation of radio equipment in aircraft and on the ground, and on the procedures for radio communications have been completely rewritten. The same concise presentation has been retained as in the first edition, and a larger type has been used to make reading still easier." *H. B.*

Munce, James F.
Industrial architecture; an analysis of international building practice. 232p. Dodge, New York, $14.75.

Plant engineering, Dec. 1960, p.224. ⅛ col.

"With the emphasis on the significance of the architect, the book includes information on the industrial plant architecture in Great Britain, West Germany and the U.S. Industrial districts and British industrial estates are taken up in one of the chapters. In another section there are comments on general structural requirements, types of roof structure, external cladding, flooring, insulation, glazing, corrosion, doors and shutters, and single vs multi-story design . . . In several chapters highlights of activities and considerations are presented for different industrial classifications such as heavy, light, process, and utilities."

Roads and engineering construction, Nov. 1960, p.112. ¼ col.

"Covers such subjects as Industrial Estates and Districts, Heavy Industry, Utilities etc. as well as the more to be expected chapters on factory design and interior essentials such as ventilating and heating and fire protection . . . Much too short to do anything more than hint at design criteria for the various types of industries and factories and so must be considered fairly elementary. Unfortunately, it is rather highly priced to be readily available to the students and beginner architects who might most appreciate it."

Neunhoeffer, O.
Analytische Trennung und Identifizierung Organischer Substanzen. 116p. 1960. Walter de Gruyter, Berlin, DM 18.

Chemical age, Nov. 19, 1960, p.868. ⅔ col.

"A manual of organic qualitative analysis, of normal scope . . . Treatment of each topic is brief . . . no experimental directions for the use of any of the relevant instruments are given and this section is not correlated with the subsequent scheme of analysis. The principles involved in separation of mixtures, and the uses of a range of 14 classification reagents are discussed without experimental advice, and this is followed by a 20-page section on the scheme of analysis . . . employing

vacuum distillation . . . The remaining 50 pages deal with characterisation of the common functional groups and here experimental directions are given with literature references."

Nixon, Floyd E.

Handbook of Laplace transformation; tables and examples. 115p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $6.

Electronic industries, Dec. 1960, p.56, 58. ⅓ col.

"Provides an up-to-the-minute coverage of Laplace transformation and brings real help to all who use linear differential equations. The first presentation of its kind to give detailed examples of practical physical problems completely solved by the Laplace transform method, the new handbook contains the most modern and extensive table of transform pairs available today, all number-coded for quick and easy reference."

Missiles and rockets, Nov. 14, 1960, p.43. 10 l.

"An excellent 'How to Do It' for the engineer having to solve linear differential equations. The mathematics is simple—a standard course in calculus being all that is needed—, and the presentation is tutorial. A reasonably backward technical student with ambition to apply Laplace transformations, will with the aid of this book be able to do so within an hour."

O'Connor, J. R., & Smiltens, J., ed.

Silicon carbide; a high temperature semiconductor. 521p. 1960. Pergamon, New York, $12.50.

Electronic industries, Nov. 1960, p.51. ¼ col.

"Contains the authoritative proceedings of the 1959 Boston Conference on Silicon Carbide, and as such is the first work to be devoted exclusively to silicon carbide technology . . . Reviews the present state of knowledge on this potentially, tremendously useful material, and evaluates its uses as a rectifier, transistor, electroluminescence source, thermoelectric generator, etc. . . Also contains the silicon carbide phase disgram and details of crystal growth, physical properties, semiconductor properties and applications."

Oettinger, Anthony G.

Automatic language translation. 351p. 1960. Harvard Univ. Press, Cambridge, Mass., $10.

Proceedings of the IRE, Nov. 1960, p.1927. 1 col.

"A useful addition to the literature on automatic language translation. However, its title and subtitle . . . are misleading, since very little attention is given to translation, even less to language, and the fundamental semantic problems of lexicography are barely mentioned and not discussed . . . The book is essentially a detailed and comprehensive description of an operating automatic Russian-English dictionary . . . Will be of interest to anyone concerned with the automatic processing of language material, whether for translation, information retrieval, or linguistic research." *David Lieberman.*

Oppenheimer, Samuel P.

Erecting structural steel. 272p. 1960. McGraw, New York, $9.50.

Engineering news-record, Nov. 17, 1960, p.115. ⅔ col.

"Engineers in both design and contracting fields will find this volume helpful, as should architects, estimators and others concerned with steel construction. Starting with detailed illustrations of hoisting machines and other erection equipment, the author follows through on all phases of field work: job analysis, description of the field erection process, estimating and other business and management aspects of steel contracting."

Orgel, Leslie E.

Introduction to transition-metal chemistry; ligand-field theory. 180p. 1960. Methuen, London, 25s.

Chemical age, Nov. 26, 1960, p.906. ⅔ col.

"The author has aimed at the best of all publics, the intelligent honours student. He has written a non-mathematical treatment of ligand-field theory, to which he has himself made such notable contributions, and explored its interpretations of the chemistry of transition metals, in particular, those aspects of their chemistry which have recently been most fashionable. The result is an introductory essay of moderate length that should appeal to students and to those who were at university before the advent of the modern theories."

New scientist, Dec. 1, 1960, p.1477. ⅔ col.

"[The author] writes simply, with a minimum of mathematics and in such a clear way that there can scarcely be any chemist who could not read and understand this account . . . Nearly all the account is illustrated in terms of pictures. But it is sound, and, with the possible exception of a few speculative ideas near the end, is in a sufficiently definite form as to be treated as well-established . . . The first book really to expound this field." *C. A. Coulson.*

Parsons, Roger.

Handbook of electrochemical constants. 113p. 1960. Academic Press, New York, $6.

Journal of the Electrochemical Society, Dec. 1960, p.273 C. ½ col.

"Topics covered range from equilibrium constants and thermodynamic functions through viscosity and diffusion, to conductivity and kinetic properties. Molten salts, organic, and some inorganic systems are covered, in addition to the usually aqueous systems. Inevitably, some topics have been treated sketchily and others omitted altogether. The orientation is that of the theoretical physical chemist and theoretical electrochemist rather than that of the applied electrochemist . . . Highly recommended . . . Should prove to be very convenient and helpful, especially in the laboratory." *H. W. Salzberg.*

Persoz, B., ed.

Introduction à l'étude de la rhéologie. Dunod, Paris, 44 N.F.

Engineering, Nov. 18, 1960, p.693. 2⅛ col. including other reviews.

"Sets out to introduce the subject without involving the reader in an elaborate mathe-

matical study of theoretical rheology, and comprises two distinct parts; an account of linearised theories of elastico-viscous and visco-elastic behaviour, followed by an outline of the main features in the behaviour of some real materials of rheological interest . . . A work that deserves the highest praise; it seems to this reviewer to achieve admirably what it sets out to do." *J. G. Oldroyd.*

Pierre, B.

Pétrole Francais. 265p. 1960. Hachette, Paris, 12 N.F.

Journal of the Institute of Petroleum, Nov. 1960, p.242 A. ⅝ col.

"Whilst the book is written in an easy and journalistic style, it is none the less a valuable record of the present position of the French petroleum industry, principally from the production and economic aspects . . . Can be recommended as giving an up-to-date (some of the facts mentioned refer to as recently as the first quarter of 1960) general view of the producing side of the French petroleum industry and especially of the somewhat complicated structure of company participation in the various fields and the part played by the State; main features of petroleum legislation are also summarized." *V. B.*

Petroleum, Dec. 1960, p.484. ½ col.

"Many readers will welcome a book, which contains in one small volume a description of the French petroleum industry in all its historical, technical, economic and financial aspects together with the comments of an author, who has received the prize of the Institut de France for a similar book on the industry of synthetic fibres."

Plank, R., and others, ed.

Handbuch der Kältetechnik. 12v. v.3: Verfahren der Kälteerzeugung und Grundlagen der Wärmeübertragung. Springer, Berlin, DM 84.

Engineer, Nov. 4, 1960, p.759. 1⅛ col.

"Divided into two parts, the first of which . . . deals with the basic methods of producing cold . . . By far the major portion of the book, however, (400 pages) is that on heat transfer, which is treated in considerable detail. In fact, this is quite an ambitious treatise on the subject by any standard. Though specially written for the refrigeration engineer, it is nevertheless a comprehensive work on the basic principles . . . Provided with copious references, including several to Russian work, and its utility is considerably enhanced by the many tables of physical properties included."

Pugh, Emerson M., & **Pugh,** E. W.

Principles of electricity and magnetism. 430p. 1960. Addison-Wesley, Reading, Mass., $8.75.

Machine design, Nov. 10, 1960, p.308. ⅛ col.

"Maxwell's four field relations and the Lorentz force-on-a-charge equation are analyzed. Principles of vector algebra and calculus are treated simultaneously with elementary electrostatics. No prior knowledge of mathematics beyond algebra and calculus is assumed. However, advanced mathematical methods are utilized when they simplify the treatment or make it more rigorous. Fundamental electrical and magnetic principles are illustrated by applications to suitable devices."

Rechenberg, Hans P.

Molybdän. 128p. 1960. Enke, Stuttgart, Germany, DM 27. (Die Metallischen Rohstoffe, v.12.)

Bulletin of the Institution of Mining and Metallurgy, Nov. 1960, p.ix. 1⅔ col.

"The author's familiarity with the extensive literature now available on the various aspects of the metal and of its sources, and his capacity for enlivening even detailed information concerning these aspects, have enabled him to produce the most comprehensive book on the subject that has hitherto been published in any language." *W. R. Jones.*

Redfarn, C. A., & **Bedford,** J.

Experimental plastics; a practical course for students. Ed.2. 140p. 1960. Iliffe, London, 22s. 6d.

Electrical review, Nov. 11, 1960, p.841. ¼ col.

"Divided into four sections, the first of which deals with the production of synthetic resins and polymers used in the manufacture of plastic materials; the second with the conversion of synthetic resins and polymers into plastic materials; and the third with methods for fabricating plastic materials by moulding, extruding, casting and so forth. The fourth section deals with the identification of plastics, and methods of testing, both for intermediate and final products."

Reiner, Markus.

Lectures on theoretical rheology. Ed.3. 158p. 1960. Interscience Publishers, New York, $4.85.

Journal of the Oil and Colour Chemists' Association, Nov. 1960, p.807. ½ p.

"Dr. Reiner remarks that he has somewhat raised the mathematical level of the presentation, making use more strictly of tensor concepts and of the summation convention of tensor analysis. He goes on to say that the reader need not fear that this will exert him unduly, that no preliminary knowledge in the field is required, that all concepts are explained as they arrive and that the reader will soon find himself at home. In spite of this disclaimer, it is perhaps advisable to reiterate that the book will be of value only to those interested in this difficult branch of the properties of matter who will not be dismayed by the use of advanced mathematical techniques." *J. E. Arnold.*

Resnick, Robert, & **Halliday,** D.

Physics for students of science and engineering. 2v. 1085p. 1960. Wiley, New York, $10.50.

American journal of physics, Dec. 1960, p.820. 1⅔ col.

"The order of treatment of topics is the traditional one but 'many topics are treated in greater depth than has been customary heretofore, and much contemporary material has been woven into the body of the text' . . . With the increased level of training in mathematics and physics in high schools, advanced level introductory college physics courses can use this book to challenge the best students.

Careful development of facility in applied mathematical methods, particularly of vector analysis, will be necessary to permit the large bulk of engineering students to achieve an understanding of the principles of physics from this book." *Raymond J. Emrich.*

Richardson, Robert S.
Fascinating world of astronomy. 274p. 1960. McGraw, New York, $5.95.

Sky and telescope, Dec. 1960, p.367. 1⅓ col.

"The author has obviously had long experience with the questions in astronomy so earnestly asked by the average layman, and he knows how to answer them. In fact, the question-and-answer motif is followed throughout the volume, which is neatly divided by subject matter into 17 chapters. Each of these is composed of from one to 19 queries, the replies being given in a single paragraph or several pages. No subject is exhausted to the point of boredom . . . Can safely be recommended as one of the best of the new books inspired by the public's quest for astronomical knowledge." *Charles H. LeRoy.*

Rogers, A. E., & **Connolly,** T. W.
Analog computation in engineering design. 450p. 1960. McGraw, New York, $16.

Design news, Oct. 24, 1960, p.88. ⅓ col.

"Stresses methods of problem preparation, shows how to use computers effectively and gives illustrative examples of computer techniques used to solve technical problems. Included is a thorough treatment of the problem procedure. In addition, the book provides a concise review of pertinent topics from engineering mathematics. Planned as a useful day-to-day reference, the book provides engineers and others who have a problem to solve by simulation on a computer with the practical help they need to facilitate their work and insure most effective application of computer techniques."

Product engineering, Dec. 12, 1960, p.106. ½ col.

"A practical text for engineers who wish to make the most of present analog computing machinery. The emphasis is on application of the machines, rather than on their design . . . Includes an introduction to the general-purpose computer, its elements, capabilities and limitations; a detailed analysis of the kinds of problems and types of equations it will solve; and a study of many typical real problems taken from a variety of industries."

Rostoker, William, and others.
Embrittlement by liquid metals. 162p. 1960. Reinhold, New York, $7.95.

Missiles and rockets, Dec. 12, 1960, p.44. 10 l.

"A new approach to embrittlement by liquid metals based on modern dislocation theories of brittle fractures emerges from this synthesis of the vast amount of information in the field. The aggregate knowledge in the literature was found to be inadequate and often inaccurate. The authors enlarged upon this store through research sponsored by the Army. Most of the information in the volume has not been published previously since the authors felt that presentation in the usual journals would result in incomplete and inadequately correlated communication."

Russell, R. D., & **Farquhar,** R. M.
Lead isotopes in geology. 243p. 1960. Interscience Publishers, New York, $9.

Earth science, Dec. 1960, p.234. ⅓ col.

"A monograph on the isotopes of common lead. Its value to the geologist and geophysicist lies in the fact that variations in the isotopic composition of many of the common elements reflect the geological histories of the rocks and minerals of which the elements are constituents. The contents cover such subjects as measurement of lead isotope ratios, the age of the earth, dating galenas by means of their isotopic constitutions, and lead-uranium-thorium methods of age determination. Case histories are presented for Canadian and Australian areas. Several hundred isotopic analyses of common leads from many different countries including the United States are contained in an appendix."

St. John, J. See **Science** survey, 1.

Sangren, Ward Conrad.
Digital computers and nuclear reactor calculations. 208p. 1960. Wiley, New York, $8.50.

Consulting engineer, Nov. 1960, p.224, 226. ¼ col.

"Divided . . . into two major sections: the first gives an introduction to the problems and methods of the digital computer, with a review of the essential mathematics; the second is a detailed explanation of the use of the digital computer in high speed nuclear calculations. The author, as Chief of Mathematics and Computing at the John Jay Hopkins Laboratory for Pure and Applied Research, can be expected to have done a competent job. A brief glance through the book does not say as much for the printer's copy-readers."

Science survey, 1; edited by Arthur Woods Haslett and J. St. John. 360p. 1960. Macmillan, New York, $5.75.

Discovery, Nov. 1960, p.502. ½ col.

"The first volume of a series which is planned to present the state of play in all the main branches of science, at a level which the intelligent layman can understand. Every article is written by a leading specialist in the field concerned. If 'the layman' means the reader who has no training or experience in any of the sciences, then most of the chapters are surely too difficult unless this layman has outstanding intelligence. But if it means the scientist reading about a subject outside his own specialty . . . then for him the book is almost perfect. Every chapter is clear, authoritative, and packed with up-to-date information." *C. S. O'D. Scott.*

Seel, F.
Atombau und Chemische Bindung. Ed.3. 96p. 1960. Enke, Stuttgart, Germany, DM 11.50.

Chemical age, Nov. 19, 1960, p.867. ⅓ col.

"The elementary ideas of the quantum theory of valency are described in non-mathematical terms with the aid of excellent diagrams. The

author mentions, and briefly describes the more important topics of elementary quantum theory of valency, but omits a great deal of detail in the interests of brevity. The first 15 pages . . . deal with the electronic structure of the atom, and the remaining 77 pages include a brief description of ionic bonds, ionic radii, complex compounds . . . and some other topics related to the quantum theory of valency. Students seeking a brief non-mathematical introduction to the quantum theory of valency will find this book very useful."

Shepherd, Dennis Glanville.
Introduction to the gas turbine. Ed.2. 300p. 1960. Van Nostrand, Princeton, N. J., $7.75.

Engineer, Nov. 11, 1960, p.801. ½ col.

"Contains . . . much that can be absorbed with profit by practical people who can follow a well ordered logical argument. They will not feel outfaced by excessively lengthy mathematical proofs because the most important points are explained by diagrams and clear exposition . . . Little attempt is made to deal with such practical matters as defects, troubles and failures, and the chapters on applications is the weakest in the book. The wisdom of including it may be questioned since it appears to be neither up-to-date nor accurate."

Engineers' digest, Nov. 1960, p.26. ⅝ col.

"Although this excellent book is, strictly speaking, a second edition, it is in fact a virtually new textbook, inasmuch as it has been completely rewritten and adopts a more basic approach to the subject than the first edition, by imparting more principle and less detail . . . Professor Shepherd's modified approach to his subject is eminently successful, and the result is an authoritative and admirably written textbook of undeniable value to students and others in this field."

Machine design, Nov. 24, 1960, p.223. ⅛ col.

"Emphasis is placed on fundamental principles of gas turbines rather than details. Only a knowledge of elementary thermodynamics and fluid flow are necessary to an understanding of material. Cycle analysis is thoroughly discussed. Chapters on components are unified to give a knowledge of main elements for assessment and understanding of performance. Both existing and possible future applications of gas turbines are reviewed."

Shields, F. E. Wentworth-. See **Wentworth-Shields, F. E.**

Silverman, S. R. See **Davis,** Hallowell, **& Silverman, S. R., ed.**

Smiltens, J. See **O'Connor, J. R., & Smiltens, J., ed.**

Smith, Clarence Joseph.
General degree physics. pt.3: Optics. 736p. 1960. E. Arnold, London, 63s.

Light and lighting, Nov. 1960, p.338. ⅝ col.

"This is Part III of the author's ambitious project of a complete degree physics for the B.Sc. General Degree course. The thoroughness of its coverage and the care with which it has been written cannot be too highly commended; although the author does not waste words, his style is admirably lucid and free from over-condensation, while the diagrams are carefully designed and clearly drawn. It is most refreshing to find in a general book for students of optics no less than 120 pages devoted to photometry, light sources and colour . . . The author has clearly gone to considerable trouble to give them their proper place in a degree course and to ensure that his treatment is both up to date and accurate." *J. W. T. W.*

Stokes, William Lee.
Essentials of earth history. 502p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $8.75.

Oil and gas journal, Nov. 7, 1960, p.166. ⅛ col.

"An outstanding presentation of the aspects of historical geology . . . Has nearly 400 excellent and interesting illustrations which help the reader in understanding materials found on the earth's surface that provide clues to the past . . . The basic facts of past history, major events that have occurred on the earth, and the relationships of one to the other are clearly discussed . . . The treatment is pitched toward liberal arts and cultural interests and is readily understood because the approach is a fundamental one. The explanations are supplemented with common-sense, everyday examples . . . Both enjoyable and stimulating."

Swallow, A. J.
Radiation chemistry of organic compounds. 380p. 1960. Pergamon, New York, 84s.

Chemical age, Nov. 19, 1960, p.867. ⅛ col.

"The author states that the aim . . . is twofold: to present an overall picture of the subject and to review all the published work in the field . . . There are 64 pages of bibliography, whose minor limitations are clearly described by the author in his preface. The author chiefly recounts experimental facts; there is little attempt at detailed theoretical treatments . . . Will principally appeal to the research chemist in search of a comprehensive review of the subject."

Swenne, C. M.
Thyratrons. 82p. 1960. Macmillan, New York, $3.

Electrical journal, Nov. 11, 1960, p.1304. ⅛ col.

"Provides a useful introduction to the principles, operation and application of thyratrons for those who are not specialists in electronics. Physical principles are explained clearly, constructional features are described together with electrical characteristics. A chapter is devoted to basic circuits, and another chapter gives examples of the application of these circuits . . . Mathematics are elementary and full use is made of very clear explanatory diagrams."

Electronic engineering, Dec. 1960, p.784. ⅛ col.

"Intended to be an introduction into a small, but significant field of industrial electronics: the application of thyratrons . . . Specially addressed to the engineer, who is, on account of his profession, already familiar with elec-

trical engineering, but who is . . . being confronted with electronics . . . Employs only the most elementary mathematical expressions and operations, and is intended for those who want to get a general impression of an important field of industrial electronics."

Szabo, Istvan.

Repertorium und Ubungsbuch der Technischen Mechanik. Springer, Berlin, DM 24.

Engineer, Oct. 28, 1960, p.714. ½ col.

"The student is presented with a concise statement of the principal theses and formulae of Technical Mechanics. By way of illustration, each section concludes with worked examples selected to bring out clearly the principles and methods involved rather than demonstrate particular practical applications . . . Covers statics, theory of elasticity and the deformation of frameworks, kinematics and kinetics, and the dynamics of liquids and gases."

Terzaghi, Karl.

From theory to practice in soil mechanics. 425p. 1960. Wiley, New York, $12.

Engineering news-record, Dec. 22, 1960, p.139. 2 col.

"This book is about Karl Terzaghi. It is both a history and a condensed specimen record of his methods in investigating and solving engineering problems in the field. No civil engineer can afford to dispense with the inspiration of his professional history or the demonstration of this methods of dealing with complex engineering problems."

Roads and engineering construction, Nov. 1960, p.112. ½ col.

"A book on Karl Terzaghi, his life, his method of working, his concepts and a collected selection of his important and not so importants writings. There is a complete bibliography of everything Terzaghi ever wrote. His method of working is shown by letters, reports and pages from his notebook dealing with specific jobs . . . We must say however, that this is not a biography of an engineer, it is instead almost the story of soil mechanics."

Soil conservation, Jan. 1961, p.143. 1½ col.

"Should be especially useful to younger men in soil mechanics . . . Shows how many of the theories they have learned were incubated and perfected. Certainly it opens up great vistas of application." *Charles E. Kellogg.*

Thiel, Rudolf.

And there was light; translated from the German by Richard Winston and C. Winston. 384p. 1960. Muller, London, 6s.

New scientist, Oct. 27, 1960, p.1142. ⅔ col.

"A fascinating story of the main achievements in Astronomy from the earliest dawn of Man's speculating about the heavens up to the present day. The translation is excellent and the book is profusely illustrated with woodcuts from the works of the earlier masters and with modern photographic reproductions. Using descriptive methods only the author, generally, gives a clear picture of the problems confronting, and solved by, successive astronomers up to the beginning of the present century; thereafter, the remainder of the book (about a quarter) in dealing with modern developments in observation and theory is to some extent selective and somewhat compressed." *W. M. Smart.*

Thomson, Louis Mellville Milne-. See **Milne-Thomson,** Louis Mellville.

Tietjens, O.

Strömungslehre. 2v. 536p. 1960. Springer, Berlin, DM 66.

Interavia, Nov. 1960, p.1432. ½ col.

"Main emphasis throughout is on physics, and mathematics are used only to lead step by step to the analytical solution of flow problems. Finally, to render the subject matter even more clearly understandable, the author has included a large number of carefully drawn diagrams of flow lines and illustrated flow processes by photographs to provide a comparison with conditions in real fluids . . . A basic textbook of the best possible kind, thorough, detailed and clearly presented. Any reader who does not understand the theory of ideal fluids after studying this book has only himself to blame . . . not the author." *P. R.*

Tolansky, Samuel.

Surface microtopography. 296p. 1960. Longmans, New York, $9.

Electronic engineering, Dec. 1960, p.784. ½ col.

"Shows what can be achieved by precision multiple-beam interferometry when applied to the microtopographies of surfaces, and aims to illustrate the wide field open to study and to present a good deal of original material . . . Will be of special interest to industrial and academic physicists, crystallographers, mineralogists, engineers, chemists and metallurgists, to electrotechnics specialists and to the diamond, machine tool and watch industries."

Metal industry, Nov. 25, 1960, p.442. ¾ col.

"The greater part . . . consists of summaries of reports and theses, from Professor Tolansky's laboratory, on various applications of interferometric techniques. The subjects covered include cleavage faces of crystals, the finish of machined and polished surfaces, the study of hardness indentations, and various etching and erosion effects. They make most interesting reading and are illustrated by numerous interferograms of superb quality." *R. F. C.*

Times science review, Winter 1960, p.18. ½ col.

"A beautiful but infuriating book . . . Demonstrates overwhelmingly the technical power with which Professor Tolansky and his students have developed methods of multiple beam interferometry to measure small vertical displacements in the range from a few angströms to a few hundred angströms on nearly flat surfaces . . . Shows also that these methods can be applied in a wide variety of situations. What it does not show is that they have led in any one case to results of sufficient importance in their own right to compel the wide use of Professor Tolansky's methods. Yet they deserve, as methods, that this should happen."

Tomer, Robert B.

Getting the most out of vacuum tubes. 160p. 1960. Sams, Indianapolis, $3.50.

Electrical South, Nov. 1960, p.120. ¼ col.

"Shows how, through proper maintenance, premature tube failures can be prevented . . . Points out those engineering practices leading to premature tube failures, and those maintenance practices contributing to additional failures. Extensive records, covering thousands of tubes in all types of electronic apparatus all over the world, back up this statement, according to the author. Written for technicians, engineers, and designers, the book covers a wide range of subjects."

Vajda, S.

Introduction to linear programming and the theory of games. 74p. 1960. Wiley, New York, $2.25.

Proceedings of the IRE, Nov. 1960, p.1925. ⅜ col.

"The uninitiated should welcome a brief description of what these subjects have to offer. The thin volume under review appears suited to fulfill this purpose for those who must read on the run. Tersely presented examples illustrate the kinds of problems which can be attacked and the methods which have been developed for their solution . . . The selection of worked examples is sufficient to get the reader off the ground, and follow-up references are furnished." *W. R. Bennett.*

Van der Ploeg, P.

Industrial electronic apparatus. 116p. Cleaver-Hume, London, 9s. 6d.

Electrical journal, Nov. 11, 1960, p.1304. ⅜ col.

"Discusses the basic requirements for the design of circuits, the choice of components, and the testing of laboratory designs during the initial development stages. Next comes a consideration of the final laboratory model as a production prototype and such matters as electrical assembly, enclosures, racks and testing are considered. A short discussion of certain aspects of production is followed by a chapter dealing with installation . . . The rest . . . is concerned largely with offering practical suggestions for the maintenance of industrial electronic equipment."

Walsh, John B., & Miller, K. S.

Introductory electric circuits. 353p. 1960. McGraw, New York, $8.50.

Radio-electronics, Jan. 1961, p.124. 12 l.

"An excellent book on basic dc and ac circuits, it analyzes two- and four-terminal networks, filters and transformers. Polyphase circuits are also treated. Toward the end, several chapters are devoted to mathematical subjects: Fourier series, Laplace transforms, matrix algebra, etc. The reader should know differential and integral calculus and basic physics. Many problems and numerical examples are included."

Wentworth-Shields, F. E., and others.

Reinforced concrete piling and piled structures. Ed.2. 149p. 1960. Concrete, London, $4.

Concrete and constructional engineering, Oct. 1960, p.380. ⅝ col.

"Incorporates so many additions and revisions as to be almost a new book . . . Written so as to be easy to follow by engineers and students with little or no experience of the subject, yet contains routine design data and typical calculations for the design of piles, groups of piles, sheet-pile retaining walls, and the estimated safe load on piles as calculated by the Hiley formula . . . Deals at some length with the driving of precast concrete piles, and with bored piles, and includes descriptions of piled structures although this part is restricted to wharves and other marine works." *D. H. L.*

Wilkinson, Walter Dunbar, ed.

Extractive and physical metallurgy of plutonium and its alloys. 324p. 1960. Interscience Publishers, New York, $10.50.

Journal of the Royal Institute of Chemistry, Nov. 1960, p.395. 1⅔ col.

"An edited version of papers presented at a Symposium on the Extractive and Physical Metallurgy of Plutonium and its Alloys. The Symposium . . . was held in San Francisco in February, 1959, and 14 papers were given . . . With reservations . . . and in spite of the fact that the valient efforts of the editor have not entirely succeeded in making a composite whole of a diverse selection of papers ranging from aqueous chemistry to physical metallurgy, the contents . . . can be recommended both to those who are new to the field and to those who have already had experience in it." *J. S. Nairn.*

Williams, D.

Introduction to the theory of aircraft structures. 448p. 1960. St. Martins, New York, $15.

Aerospace engineering, Dec. 1960, p.122. ¼ col.

"The aim . . . is to provide a background for the solution of aircraft structural problems as distinct from providing a collection of solutions to individual problems. An attempt has been made to make it largely self-contained, and therefore most of the results are derived from first principles; only the elementary theory of beams is assumed to be already familiar to the reader. The author is Deputy Chief Scientific Officer, Structures Dept., RAE."

Aircraft engineering, Nov. 1960, p.340. 1¼ col.

"The impression left by a first reading is of a store-house of interesting and suggestive ideas to which one will be glad to return time and again. Dr. Williams is highly readable, he avoids formal proofs . . . Throughout, the important role now played by the digital computer is realised and its requirements kept in mind in the selection of methods for description. Much of the material appears in a text book for the first time and the book amply fills a need which has acutely been felt in this country for many years." *H. B. H.*

Williams, John N.

Boiler house practice. Ed.3, revised. 648p. 1960. Allen, G., London, 70s. net.

Electrical review, Nov. 11, 1960, p.841. 7 l.

"This is the third edition of this well-estab-

lished textbook which fully covers the syllabuses of the boiler house practice courses of the City and Guilds of London Institute. No major changes have been made, but a number of technical discussions are extended and reference is made to some new developments and the influence of the Clean Air Act on fuel technology." *T. R. W.*

Steam engineer, Nov. 1960, p.65. ⅜ col.

"The author . . . is widely-known throughout the country as a fuel technologist and authority on steam generating plant, and there will be many who will welcome . . . his book . . . There are twenty-four chapters . . . covering a wide range of subjects associated with the generation of steam . . . Advantage has been taken in the present edition to extend the discussions in certain sections and to refer to new developments, as well as to consider the implications of the Clean Air Act upon fuel technology."

Willmer, Edward Nevill.
Cytology and evolution. 430p. 1960. Academic Press, New York, $10.

Times science review, Winter 1960, p.18. ⅛ col.

"Purpose is to point the way to making evolutionary sense of cytology and at the same time to the use of cytology, and even the biochemical mechanisms of specialized cells, as possible evidence of origins. Emphasizing the general similarity of animal cells at all stages . . . [the author] delves deeply into the past. Thus he looks for the origin of the distinction between 'fast' and 'slow' muscle in primitive organisms. Deliberately speculative and critical of the methods and outlook of other kinds of specialist, he is—in a strictly biological sense—stimulating."

Wilson, J. R., ed.
Demineralisation by electrodialysis. 378p. 1960. Butterworth & Co., London, 60s.

British chemical engineering, Dec. 1960, p.888. ⅝ col.

"While the technical and engineering parts form the backbone of the work, it is introduced by two valuable chapters dealing with the fundamental aspects of electrodialysis, first in a general and then in an exhaustive manner, leaving it to the reader how deeply he wishes to penetrate into the fundamental background based on more than a thousand scientific papers and patents quoted . . . Can be strongly recommended to all those who are interested in water treatment, as well as to students in applied electrochemistry and chemical engineering." *E. Gleuckauf.*

Industrial chemist, Nov. 1960, p.572. 1½ col.

"The appearance of an authoritative book on this subject is . . . an event of considerable importance. Dr. Wilson, the editor and one of the principal authors . . . is a leading authority in the field, and he has produced a work of great value . . . Not merely the general introduction to the subject which might be expected in a first volume, but is in fact a comprehensive treatise covering all aspects of the process . . . In spite of . . . minor points . . . [of criticism] which can easily be corrected in a second volume, this book will be of greatest value to all workers in the electrodialysis field." *T. V. Arden.*

Woods, K. B., and others, ed.
Highway engineering handbook. 1696p. 1960. McGraw, New York, $25.

ASTM bulletin, Oct. 1960, p.62, 64. ⅘ col.

"The editors have accomplished this task in a commendable manner and have developed a book containing all important information . . . The four main parts cover administration and finance; engineering characteristics of soils and soil testing; contracts and specifications; and geometric design. There are 28 sections in all, each written by leading specialists . . . The book is replete with extensive lists of references. Much of the data has been condensed into useful tables. There is a very detailed subject index—most helpful in a book of this size." *L. C. Gilbert.*

Wroe, H. J.
Handbook for deputies and shotfirers. 144p. 1960. Wall, T., Wigan, England, 12s. 6d.

Mining engineer, Nov. 1960, p.67. ½ col.

"The sections on the appointment and duties of a deputy, mine atmospheres and ventilation, gas-testing, explosives and shotfiring are excellent, while the remaining sections cover other aspects of mine working and safety . . . Easy to read and gives simple explanations of mining equipment and machinery installations encountered by workmen in the course of their duties. There are one or two minor misprints, but the author and publishers are to be congratulated on the production of a very useful handbook for miners and mining officials of all grades." *F. Rylance.*

Zeldovich, Ia. B., & **Kompaneets,** A. S.
Theory of detonation; translated from the Russian. 284p. 1960. Academic Press, New York, $10.

Chemistry & industry, Nov. 5, 1960, p.1380. 1⅔ col.

"Work is summarised up to 1955 in the present book, which, as the authors point out in their preface, makes no attempt to discuss the non-Russian literature. Despite this restriction, the text is most valuable, not only as a record of one of the most important schools of research in this field, but also as a general introduction to the subject, which would be eminently suitable for beginners but could also be read with interest and advantage by the expert. This is because it gives a remarkably thorough treatment of basic ideas, and the reader is introduced to each aspect in turn with detailed mathematical explanations." *S. Paterson.*